

but that the different ganglia persist from the larval state. The peripheral nerves also persist or survive from the larva to the beetle (the species studied was *Oryctes nasicornis*); besides there is an increase in the number, or accession of new nerves different from those in the larva, and peculiar to the beetle.

A *punktsubstance*, in Leydig's sense, appears to be wanting, as also the transverse commissures usually uniting the hemispheres of a ganglion. In place of the latter are extraordinarily numerous transverse bundles of fibers which, arising from the ganglion cells of one side, form the peripheral nerves of the other side, and also a bundle which passing through the interlacing of each half of the ventral cord, assumes three longitudinal directions. These nerve-fibers running parallel to the axis pass continuously from one end of the ventral cord to the other, forming in fact the longitudinal commissures of the ventral cord. These commissures take their origin neither out of a central punktsubstance, nor from a peripheral ganglion mass, but are mere continuations of longitudinal nerve-fibers decreasing posteriorly in thickness, and which extend through the œsophageal ring commissures to the brain.

A NEW GENUS OF CATOSTOMIDÆ.—Prof. D. S. Jordan, informs me that the dentition of his genus *Chasmistes* is identical with that of *Catostomus*. The two species from Klamath lake, Oregon, described by me under the names of *Chasmistes luxatus* and *C. brevirostris* (AMERICAN NATURALIST, 1879, 785), exhibit a different type of dentition. The pharyngeal bones are very slender and are flattened, and their teeth are minute and very numerous, as in *Carpiodes*. The genus thus defined will stand in the *Catostomine* division, and next the *Bubalichthyinæ*, and may be called LIPOMYZON.—E. D. Cope.

CELLULAR IRRITABILITY.—M. Richet in the *Revue Scientifique*, gives the following synopsis of the effects of stimuli on simple animal and vegetable cells. (1) Oxygen is necessary, and there is consumption of oxygen during the life of the cellule. (2) The intensity of movements grows with the temperature, up to 40° C.; above 40° the movements disappear. (3) Neutral solutions slightly alkaline are favorable; acid solutions are fatal. (4) All change of condition is a stimulant to the cell, and consequently provokes its contraction. (5) But this change of condition must be abrupt, for, if gradual, it does not provoke reaction. (6) The reaction from the stimulus is not sudden, but there is a period of "latent excitement" which diminishes in proportion to the intensity of the excitation. (7) Weak stimulation, powerless when isolated, becomes effective when frequently repeated at short intervals.

BUDDING IN FREE MEDUSÆ.—The germination of the young from the walls of the proboscis of *Lizzia octopunctata* Forbes, seems to me to throw some light on a theoretical question of